

Embodiment:

Fig. 1 is a cross sectional view of one embodiment of the backlight of this invention.

Ultraviolet lamp 2 is arranged in truth rear of the display panel as shown in figure. The transparent board 5 coated the phosphor thereon is adjacent of the display panel side in between the ultraviolet lamp and display panel 1. Moreover, a concave curved surface reflector coated the phosphor thereon is mounted on the panel side of rear side of ultraviolet lamp 2 so that the ultraviolet rays should not run away. By the above-mentioned structure, the ultraviolet rays 8 emitted from ultraviolet lamp 2 irradiate display panel 1 according to through two routes described as follows.

(Route 1)

Ultraviolet rays beats the phosphor coated on transparent board 5 directly, and visible radiation 9 is emitted as the perfect diffusion light.

(route 2)

Ultraviolet rays beats phosphor 6 on the other side, and visible radiation 10 is emitted on the display panel side as the perfect diffusion light. This light path through the transparent board 5 where the phosphor is coated and display panel 1 is irradiated.

The total light of route 1 and route 2 also irradiates display panel 1 as light near the perfect diffusion light.

According to the above-mentioned embodiment, parts such as the diffusion boards to make light from the backlight surface uniform perfect diffusion light are not necessary, thereby the loss of efficiency is decreased.

Fig. 3 is a cross sectional view of another embodiment of the backlight of this invention. The backlight is the type which deletes transparent board 5 in Fig. 2, and is coated the phosphor directly on the back side of display panel 1. The effects that the number of parts decreases by transparent board 5 being deleted besides the above-mentioned effect, and the thickness of the backlight system becomes thin are added.

Fig. 4 is a cross sectional view of an embodiment of the backlight in which the lamp is arranged sideways. The phosphor side of the lamina 22 coated phosphor 21 is turned to the display panel and the lamina 22 is arranged on the back side of the display panel as shown in figure.

By the above-mentioned structure, the ultraviolet rays collected by reflector 20 beats phosphor 21, and the visible light is irradiated from phosphor 21 to display panel

1 as perfect diffusion light.

Fig. 5 is a cross sectional view of another embodiment of the backlight in which the lamp is arranged sideways. Lamina 5 with a good light transmittance which coated phosphor 4 is adjacent to display panel 1 as shown in figure, and reflector 23 is arranged a little separating as shown in figure. Ultraviolet rays effectively beats phosphor 4 by reflector 23, and the visible radiation from phosphor 4 is emitted as a perfect diffusion light and is irradiated to the display panel through the transparent board 5.